ORDER NO. HAD8703042C8

Service Manual

Turntable System

SL-J100R

DC Servo
Automatic Turntable System

Color	Areas
(K)	[E] ..... Switzerland and Scandinavia.
(K)	[EK] .... United Kingdom.
(K)	[XL] .... Australia.
(K)	[EG] ... F.R. Germany.
(K)	[EB] .... Belgium.
(K)	[EH] .... Holland.
(K)	[EF] .... France.
(K)	[Ei] ..... Italy.
(K)	[EC] .... Czechoslovakia
(K)	[XA] .... Asia, Latin America, Middle Near East, Africa and Oceania.

SPECIFICATIONS

■ TURNTABLE SECTION

Type: Automatic turntable
Drive method: Belt drive
Motor: DC motor
Drive control method: DC servo control
Turntable platter: Aluminum die-cast
Diameter 300 mm (12")
Turntable speeds: 33-1/3 rpm and 45 rpm
Wow and flutter: 0.045% WRMS ±0.06% weighted
zero to peak (IEC 98A weighted)
Rumble: 70 dB DIN-B (IEC 98A weighted)

■ TONEARM SECTION

Type: Static-balanced, straight tonearm
Plug-in-connector cartridge system
Overhang: 25 mm (1")
Effective length: 200 mm (7-7/8")
Tracking error angle: Within 3°18' at inner groove of 30 cm (12") disc
Within 0°36' at outer groove of 30 cm (12") disc
Applicable cartridge weight: 6 g

■ CARTRIDGE SECTION

Type: Moving magnet stereo cartridge
Magnet circuit: All laminated core
Frequency response: 10 Hz—30 kHz
Output voltage: 2.5 mV at 1 kHz, 5 cm/s. zero to peak lateral velocity
(7 mV at 1 kHz, 10 cm/s. zero to peak, 45° velocity DIN 45 500)
Channel separation: 22 dB at 1 kHz
Channel balance: Within 2 dB at 1 kHz
Recommended load impedance: 47 kΩ—100 kΩ
Compliance (dynamic): 12×10^{-6} cm/dyne (100 Hz)
Stylus pressure range: 1.25 ±0.25 g
Weight: 6 g (cartridge only)
Replacement stylus: EPS-24CS

■ GENERAL

Power supply: For Continental Europe:
AC 220V, 50Hz
For United Kingdom and Australia: AC 240V, 50Hz
For others:
AC 110~127/220~240V, 50/60Hz
Power consumption: 3 W
Dimensions (W×H×D): 360×83×320 mm
(14-1/4"×3-1/4"×12-1/2")
When dust cover is open.
360×380×320 mm
(14-1/3"×14-31/32"×12-1/2")
Weight: 2.5 kg (5.5 lb)

Specifications are subject to change without notice for further improvement.
Weight and dimensions shown are approximate.

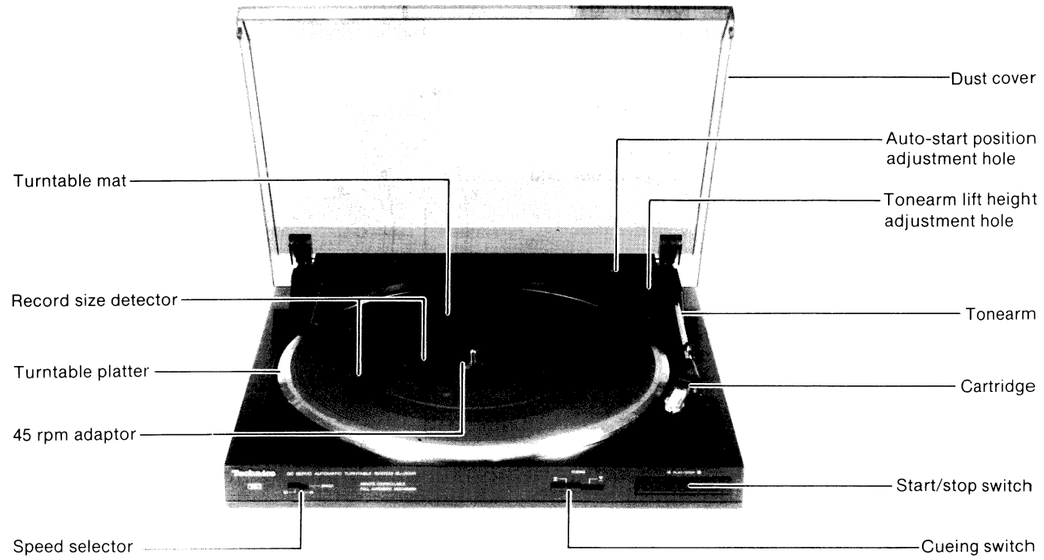
Technics

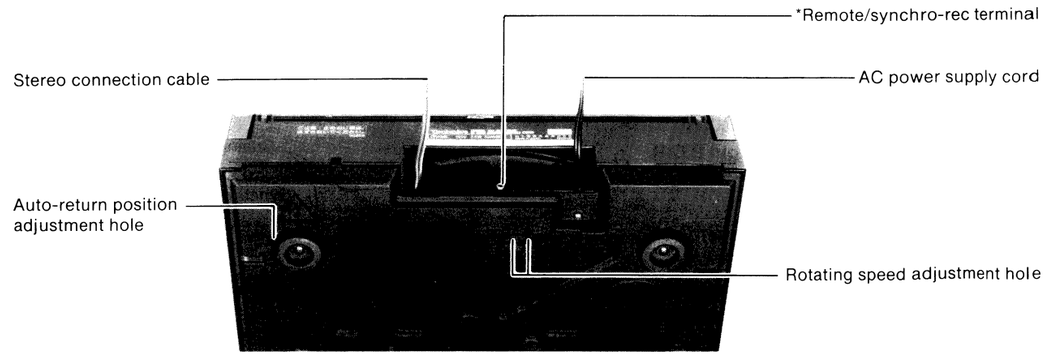
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

■ CONTENTS

	Page
LOCATION OF CONTROLS	2
DISASSEMBLY INSTRUCTIONS	3
CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM	6
EXPLODED VIEW	7
SCHEMATIC DIAGRAM	9
REPLACEMENT PARTS LIST	11
RESISTORS AND CAPACITORS	12
MEASUREMENT AND ADJUSTMENT	13
PACKING	14

■ LOCATION OF CONTROLS

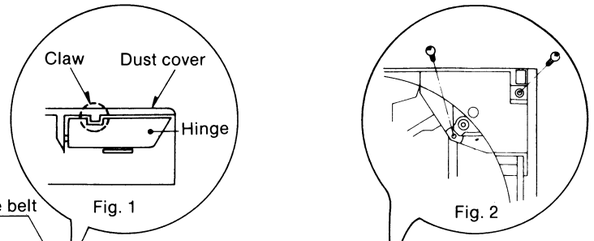




*Remote/synchro-rec terminal .... Synchro recording is possible if a Technics amplifier with "SYNCHRO-REC" or "CONTROL" terminal is connected. Also remote control operation is possible if the amplifier has the remote control functions.
(Refer to the operating instructions of the amplifier and tape deck.)

■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	How to remove the upper side parts
Procedure 1	



① To remove the dust cover
1. Open the dust cover.
2. Hold the hinge shown in Fig. 1 and lift the dust cover.

② To remove the turntable platter
1. Open the dust cover.
2. Remove the turntable mat.
3. Remove the turntable drive belt and lift the turntable platter.

③ To remove the 45 rpm adaptor
1. Remove the turntable platter.
2. Turn the 45 rpm adaptor counter-clockwise.
3. Release the 3 claws.

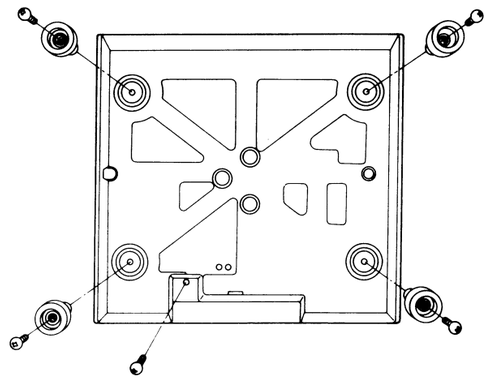
④ To remove the tonearm cover
1. Remove the dust cover and turntable platter.
2. Remove the 2 screws shown in Fig. 2.
3. Lift the tonearm cover.

⑤ To remove the record size detector
1. Remove the turntable platter.
2. Release the 2 claws.

⑥ To remove the cartridge
- Remove the cartridge setscrew and pull out the cartridge.

Ref. No. 2	How to remove the bottom board
Procedure 1-② ➧ 2	

1. Remove the turntable platter.
2. Clamp the tonearm.
3. Turn over the unit on a soft cloth.
4. Remove the 5 screws.



Ref. No. 3	How to remove the lower side parts
Procedure 2 ➧ 3	

To remove the main P.C.B.
1. Set the speed selector to 33 rpm.
2. Remove the 2 screws (❷, ❺).

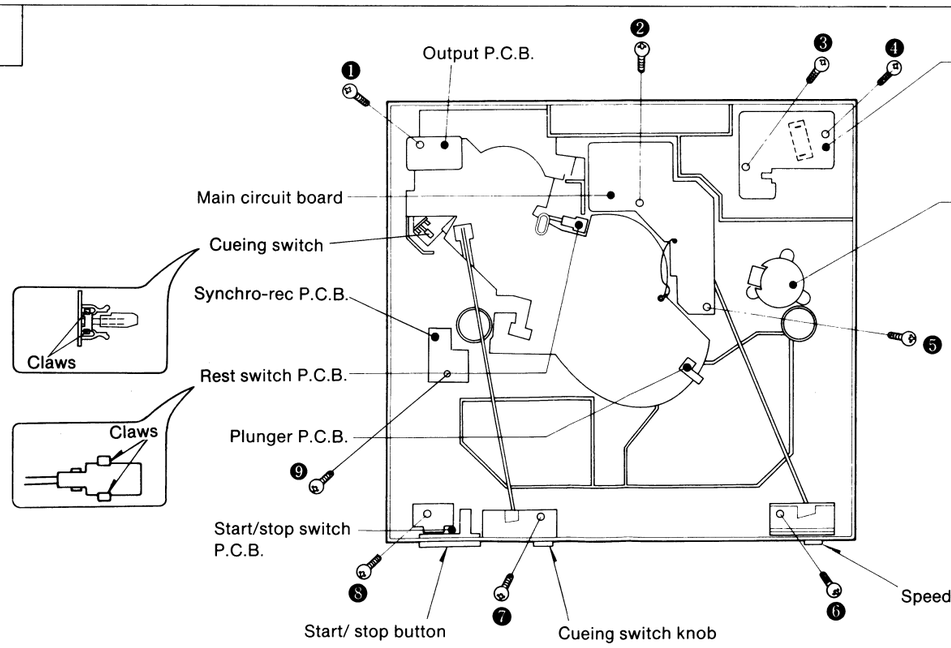
To remove the output P.C.B.
- Remove the screw ❶.

To remove the plunger P.C.B.
- Unsolder the terminals.

To remove the rest and cueing switch P.C.B.
1. Release the 2 claws on both sides.
2. Pull out the rest switch P.C.B.

To remove the synchro-rec P.C.B.
- Remove the screws ❾.

To remove the start/stop switch P.C.B.
- Remove the screw ❽.



To remove the power transformer
- Remove the 2 screws (❸, ❹), and lift the power transformer.

To remove the turntable drive motor
1. Unsolder the 4 lead wires.
2. Lift the turntable drive motor.

To remove the speed selector knob
1. Remove the screw ❻.
2. Remove the rod.

To remove the cueing switch knob
1. Remove the screw ❼.
2. Remove the rod.

To remove the start/stop button
- Remove the screw ❽.

Ref. No. 4	How to remove the tonearm unit
Procedure 2 ➧ 4	

1. Unsolder the 5 arm leads from the output P.C.B. (Fig. 1)
2. Turn over the unit (top side up), and then remove the dust cover and the tonearm cover.
3. Remove the 2 screws shown in Fig. 2.
4. Release the tonearm clamper and move the tonearm toward the center.
5. Lift the tonearm unit.

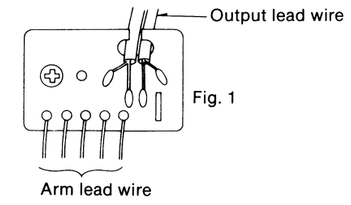


Fig. 1

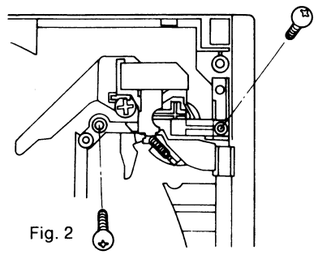


Fig. 2

Ref. No. 5	How to remove the cueing selector
Procedure 4 ➧ 5	

1. Remove the spring.
2. Pull out the rod from the cueing unit.
3. Remove the index plate.
4. Remove the 2 screws.
5. Lift the cueing unit.

* The liftarm can be replaced without removing the cueing unit in the procedure shown in Fig. 2.

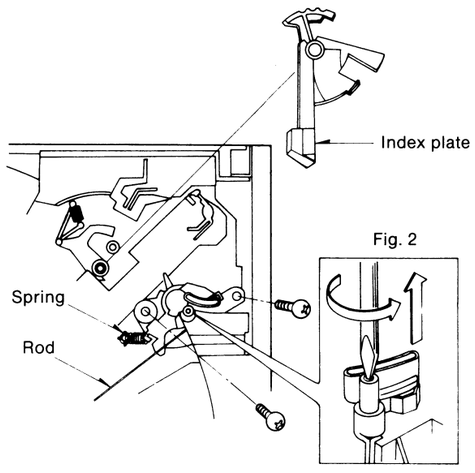


Fig. 2

Ref. No. 6	How to remove the center spindle
Procedure 2 ➧ 6	

1. Remove the ground lead screw. (Fig. 1)
2. Unsolder the 2 terminals of the plunger. (Fig. 1)
3. Turn over the unit (top side up).
4. Release the claw and lift the main gear.
5. Remove the 3 screws.

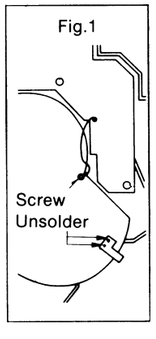
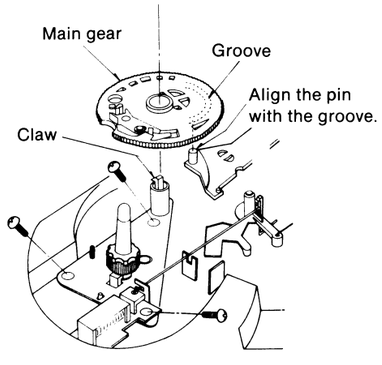
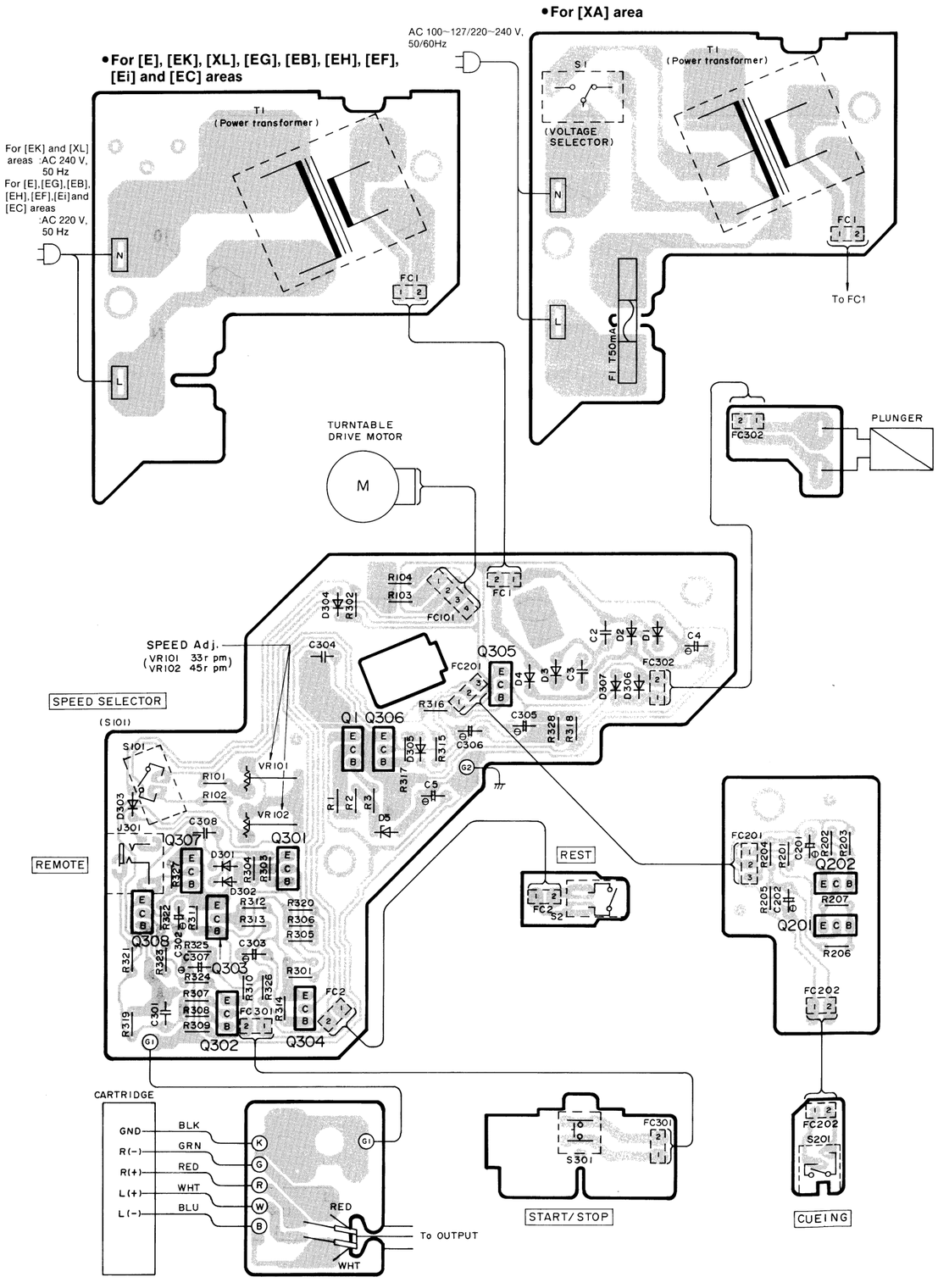


Fig.1

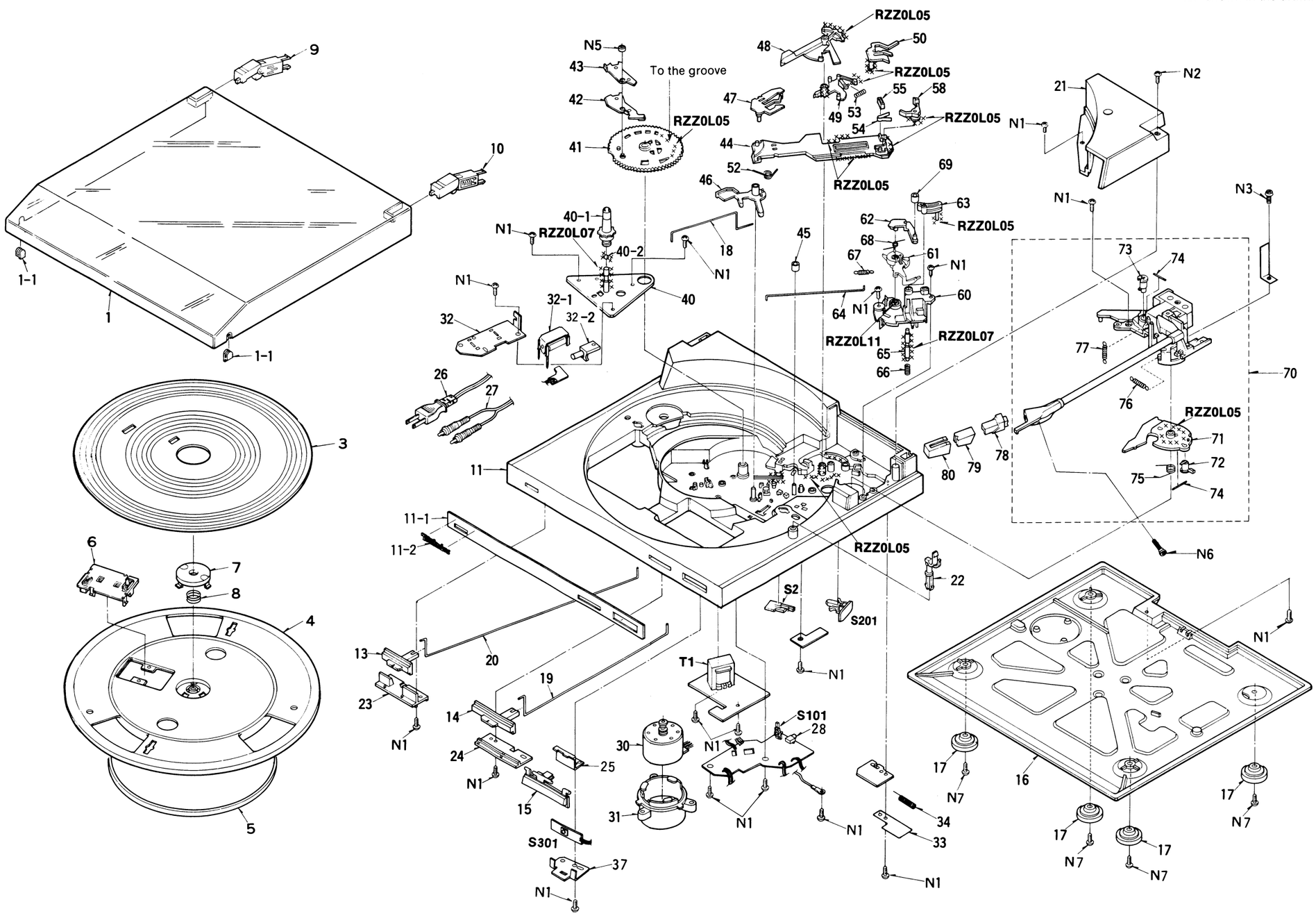


■ CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



■ EXPLODED VIEW

Note: When changing mechanism parts, apply the specified grease to the areas marked "xx" shown in the drawing.

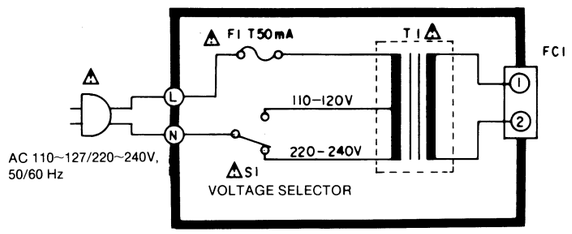


| | | |

■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

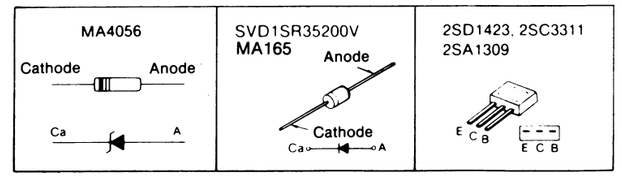
• POWER SOURCE CIRCUIT FOR [XA] AREA

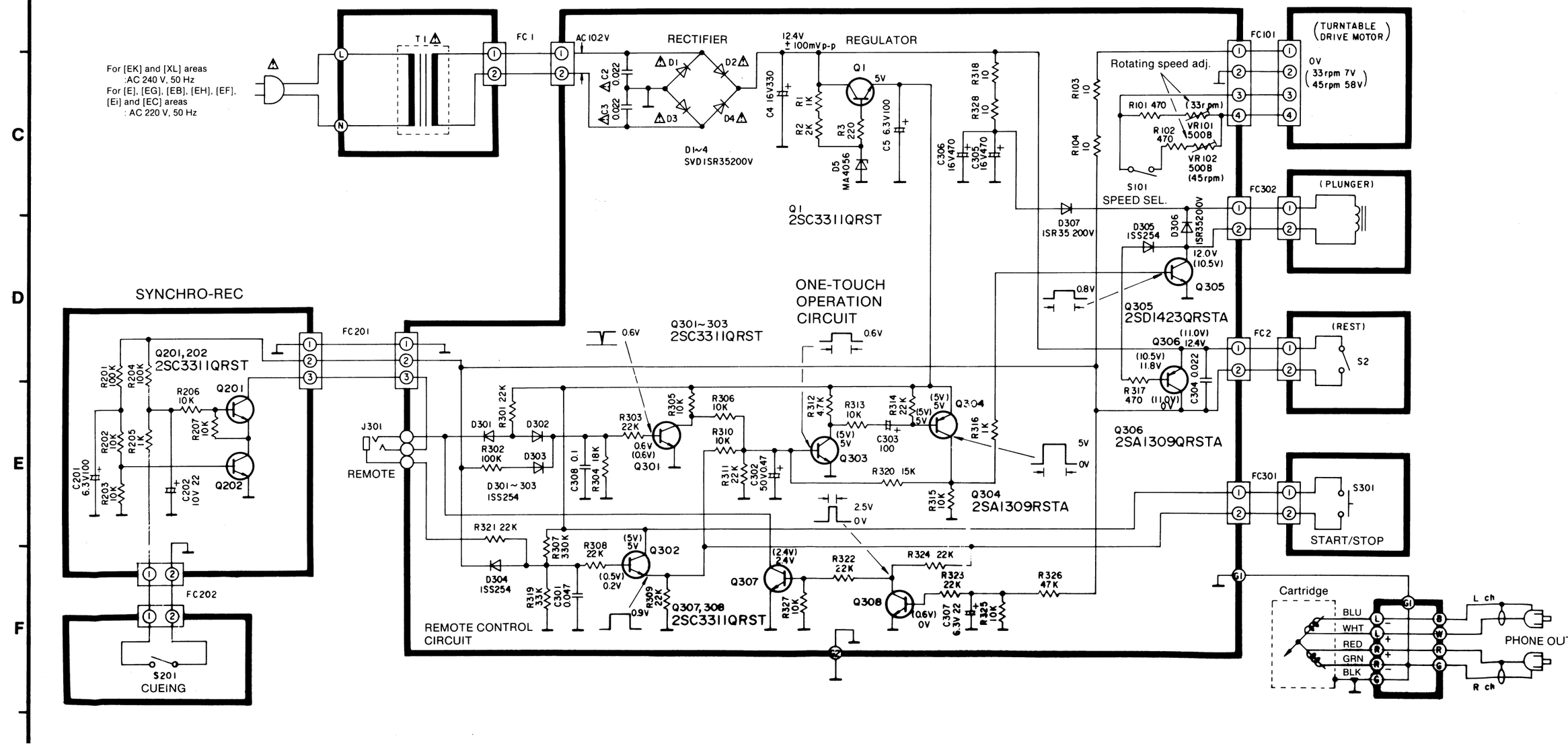


Notes:

1. **S1** : Voltage selector for [XA] area.
2. **S2** : Rest (Power) switch in "OFF" position.
3. **S101** : Speed select switch in "30" position.
4. **S201** : Cueing switch
5. **S301** : Start/stop switch.
6. The values are of the reference voltage of the unit in stop motion measured by a DC voltmeter (high impedance) on the basis of chassis. So some error might be included depending on the internal impedance of the measuring instrument and the unit measured.
   ★ ( ): Voltage in 33 rpm.
7. Waveforms appears when start/stop signals are input.
8. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

• Terminal guide of transistors and diode





■ REPLACEMENT PARTS LIST

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Code	Description
TRANSISTORS			
Q1, Q201	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q202, Q301	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q302, Q303	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q304	2SA1309Q	001 030 4058 0	TRANSISTOR
Q305	2SD1423Q,RS	001 030 5989 2	TRANSISTOR
Q306	2SA1309Q	001 030 4058 0	TRANSISTOR
Q307, Q308	2SC3311A-Q	001 030 5279 5	TRANSISTOR
DIODES			
D1, D2 ⚠	SVD1SR35200A	001 032 3951 4	RECTIFIER
D3, D4 ⚠	SVD1SR35200A	001 032 3951 4	RECTIFIER
D5	MA4056-M	001 032 7209 1	DIODE
D301, D302	MA165	001 032 0494 0	DIODE
D303, D304	MA165	001 032 0494 0	DIODE
D305	MA165	001 032 0494 0	DIODE
D306, D307	SVD1SR35200A	001 032 3951 4	DIODE
VARIABLE RESISTORS			
VR101, VR102	EVN61AA00B52	001 180 2028 7	V.R., 500Ω(B)
COILS AND TRANSFORMERS			
T1 ⚠ (EK, XL)	SLTB35F33K	001 202 7969 2	POWER TRANSFORMER
T1 ⚠ (E, EG, EB, EF) (EH, EI, EC)	SLTB35F34K	001 202 7970 9	POWER TRANSFORMER
T1 ⚠ (XA)	SLTB35F35K	001 202 7971 8	POWER TRANSFORMER
FUSES			
F1 ⚠ (XA)	XBA2C005TB0	002 380 1438 5	250V, T50mA
SWITCHES			
S1 ⚠ (XA)	SFDSHXW02067	003 435 5801 0	SW, VOLTAGE SELECT
S2	SSPB4-1	003 434 1040 8	SW, REST
S101, S201	SSP83	003 434 0996 9	SW, SPEED, CUEING
S301	EVQQS205K	003 439 1236 3	SW, START
CABINET AND CHASSIS			
1	SGDB90E	016 802 2160 4	DUST COVER
1-1	SHGB5	016 653 1018 2	CUSHION RUBBER
3	SFTGN05N01	017 827 0277 5	TURNTABLE MAT
4	SD0B3-1	016 766 0212 8	TURNTABLE
5	SJY90080-1	016 754 0008 6	BELT
6	SFUMN05N04E	017 630 0449 6	SIZE DETECTING PLATE
7	SFWEN05N01	017 918 0147 8	45RPM ADAPTOR
8	SFQAN05N01	017 726 0395 2	SPRING
9	SBHB4E	016 824 0319 5	HINGE
10	SBHB5E	016 824 0320 2	HINGE
11 (E, EC)	SKMLJ100R-KE	016 800 3106 6	CABINET
11 (EB, EH, EF) (EI)	SKMLJ100RKEB	016 800 3105 7	CABINET
11 (EG)	SKMLJ100RKEG	016 800 3103 9	CABINET
11 (EK)	SKMLJ100RKEK	016 800 3104 8	CABINET
11 (XA)	SKMLJ100RKXA	016 800 3101 1	CABINET
11 (XL)	SKMLJ100RKXL	016 800 3102 0	CABINET
11-1	SGXB370	016 846 3720 6	ORNAMENT PLATE
11-2	SGB628-1	016 863 0280 4	BADGE
13	SBCB280-0K	016 702 6918 3	KNOB, SPEED SELECT
14	SBCB270-0K	016 702 6919 2	KNOB, CUEING
15	SBCB260-0K	016 702 6920 9	BUTTON, START/STOP
16	SKUB9	016 802 2161 3	BOTTOM BOARD
17	SFGAN05N01	017 828 0027 6	INSULATOR
18	STZB19	016 712 0352 7	ROD
19	STZB15-1	016 712 0340 1	ROD, CUEING
20	STZB16-1	016 712 0341 0	ROD, SPEED SELECT
21	SKMB691-0K	016 640 0513 7	TONEARM COVER
22	SHRB69E	016 652 0708 2	TONEARM REST
23	SKMB701	016 640 0514 6	BRACKET
24	SKMB711	016 640 0515 5	BRACKET
25	SKMB721	016 640 0516 4	BRACKET
26 ⚠ (XA)	RJA52Y	003 490 3914 9	POWER CORD
26 ⚠ (XL)	SJAG23	003 490 1056 4	POWER CORD
26 ⚠ (E, EG, EB, EF) (EH, EI, EC)	SJA138-3	003 490 2575 2	POWER CORD
26 ⚠ (EK)	SJA189	003 490 5448 6	POWER CORD
27	SJPB6	003 492 6778 7	OUTPUT CORD
28	SJJ130-3	003 400 7580 9	JACK, REMOTE
30	SMILJ100R-KN	002 310 2487 4	DRIVE MOTOR
31	SHGB1-1	016 653 1114 3	RUBBER SPACER
32	RFP14Z	003 455 0326 4	PLUNGER ASS'Y
32-1	1UE0005ZAH		PLUNGER
32-2	SHRLJ100R-KN	016 652 0763 5	PLUNGER CAP
33	SMCB5	016 601 0589 6	SHIELD PLATE
34	SUSB56	016 726 0888 4	SPRING
37	SUWB32	016 650 5335 1	BRACKET
40	SUWB26E	016 650 5304 8	BASE ASS'Y
40-1	SDWB1A	016 713 0352 2	CENTER SPINDLE
40-2	SFYB-5-32	017 757 0305 7	STEEL BALL
MECHANISM PARTS			
41	SDGB10	016 745 0217 0	MAIN GEAR
42	SFURZ15R51	017 655 0093 7	DRIVE LINK
43	SFURN05N52	017 655 0092 8	FRICTION LINK
44	SHRB74	016 652 0687 0	DRIVE PLATE
45	SHGB23	016 653 1169 8	CUSHION RUBBER
46	SHRB96	016 652 0744 8	DRIVE LEVER
47	SHRB71	016 652 0691 4	SWITCH LEVER
48	SHRB76	016 652 0688 9	INDEX PLATE
49	SHRB73-1	016 652 0831 0	SUB-INDEX PLATE
50	SHRB72-1	016 652 0750 0	SUB-REMOVAL PLATE
52	SUSB49	016 726 0890 0	SPRING
53	SUSB28	016 726 0805 3	SPRING
54	SUSB31	016 726 0808 0	SPRING
55	SFGZB63M51	017 653 0144 3	CUSHION RUBBER
58	SHRB83	016 652 0695 0	PLATE
60	SHRLJ100R-KE		CUEING BASE
61	SHRB108	016 652 0830 1	CUEING CAM
62	SHRB78	016 652 0686 1	BRAKE LEVER
63	SFUMN05N60-2	016 717 0260 5	ARM LIFT
64	SUSB46-1	016 726 0920 1	ROD
65	SFXJN05N51	017 713 0166 4	SHAFT
66	SUSB1	016 726 0725 2	SPRING
67	SUSB47-1	016 726 0921 0	SPRING
68	SUSB48	016 726 0892 8	SPRING
69	SHGB19	016 653 1115 2	RUBBER SPACER
TONE ARM			
70	SFAB15A	001 271 0695 0	TONEARM ASS'Y
71	SHRB80	016 652 0684 3	PLATE
72	SHRB79	016 652 0685 2	CAM
73	SFEB12	016 716 0042 8	CAM
74	SUSB44	016 726 0896 4	SPRING
75	SUSB54	016 726 0889 3	SPRING

■ REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Code	Description
76	SFQHF01N06	017 726 0359 6	SPRING
77	SUSB43-1	016 726 0902 3	SPRING
78	EPC-P24S		CARTRIDGE
79	EPS-24CS	001 273 0129 5	STYLUS
80	SFCNC05101	016 845 0206 6	COVER, STYLUS
SCREWS,WASHERS & NUTS			
N1	XTV3+10BFN	005 501 0818 6	SCREW
N2	XTV3+10JFZ	005 501 0833 7	SCREW
N3	XTN3+14J		SCREW
N5	SFUMZ15R61	017 643 0111 8	WASHER
N6	SFPEV0Q601	005 500 4982 4	SCREW
N7	XTV3+8J	005 501 0901 2	SCREW

■ RESISTORS & CAPACITORS

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.

Numbering System of Resistor

Example

ERD	25	F	J	102
Type	Wattage	Shape	Tolerance	Value
ERX	2	AN	J	471
Type	Wattage	Shape	Tolerance	Value 47x10¹ (ohm)

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value	Tolerance	Peculiarity
ECEA	50	M		330
Type	Voltage	Peculiarity		Value (33x10⁰ microfarad)

Resistor Type	Wattage	Tolerance
ERD : Carbon ERG : Metal Oxide ERX : Metal Film ERQ : Fuse Type Metal ERD□ L : Carbon (chip) ERO□ K : Metal Film (chip) ERC : Solid	10 : 1/8W 12 : 1/2W 25 : 1/4W 1A : 1W 18 : 1/8W S2 : 1/4W S1 : 1/2W 2F : 1/4W 50 : 1/2W 2A : 2W	J : ±5% F : ±1% G : ±2% K : ±10%

Capacitor Type	Voltage	Tolerance
ECE : Electrolytic ECCD : Ceramic ECKD : Ceramic ECQM : Polyester ECQP : Polyproylene ECG : Ceramic ECEA□□□N: Non Polar Electrolytic QCU□ : Ceramic (Chip Type) ECUX : Ceramic (Chip Type) ECF : Semiconductor EECW : Liquid electrolyte double layer capcitor	0J : 6.3V 1A : 10V 1C : 16V 1E : 25V 1H : 50V 1V : 35V 50 : 50V 05 : 50V 2H : 500V 2A : 100V 1 : 100V KC : 400V AC KC : 125VAC (UL) 1J : 63V	C : ±0.25pF J : ±5% K : ±10% Z : +80% −20% P : +100% −0% M : ±20% D : ±0.5pF G : ±2%

Ref. No.	Part No.	Part Code
RESISTORS		
R1, R2	ERDS2TJ102	001 152 2346 4
R3	ERDS2TJ221	001 152 2431 8
R101, R102	ERDS2TJ471	001 152 2361 5
R103, R104	ERDS2TJ100	001 152 2420 1
R201	ERDS2TJ104	001 152 2348 2
R202	ERDS2TJ103	001 152 2347 3
R203	ERDS2TJ153	001 152 2351 7
R204	ERDS2TJ104	001 152 2348 2
R205	ERDS2TJ102	001 152 2346 4
R206	ERDS2TJ103	001 152 2347 3
R207	ERDS2TJ153	001 152 2351 7
R301	ERDS2TJ223	001 152 2432 7
R302	ERDS2TJ104	001 152 2348 2
R303	ERDS2TJ223	001 152 2432 7
R304	ERDS2TJ183	001 152 2429 2
R305, R306	ERDS2TJ103	001 152 2347 3
R307	ERDS2TJ334	001 152 2438 1
R308, R309	ERDS2TJ223	001 152 2432 7
R310	ERDS2TJ103	001 152 2347 3
R311	ERDS2TJ223	001 152 2432 7
R312	ERDS2TJ472	001 152 2362 4
R313	ERDS2TJ103	001 152 2347 3
R314	ERDS2TJ223	001 152 2432 7
R315	ERDS2TJ103	001 152 2347 3
R316	ERDS2TJ102	001 152 2346 4
R317	ERDS2TJ471	001 152 2361 5
R318	ERDS2TJ100	001 152 2420 1
R319	ERDS2TJ333	001 152 2358 0
R320	ERDS2TJ153	001 152 2351 7
R321, R322	ERDS2TJ223	001 152 2432 7
R323, R324	ERDS2TJ223	001 152 2432 7
R325	ERDS2TJ103	001 152 2347 3
R326	ERDS2TJ473	001 152 2363 3
R327	ERDS2TJ103	001 152 2347 3
R328	ERDS2TJ100	001 152 2420 1
CAPACITORS		
C2, C3 ⚠	ECKD1H223PF	001 103 1510 9
C4	ECEA1CU331	001 120 3200 5
C5, C201	ECEA0JU101	001 120 2829 8
C202	ECEA1AU220	001 120 3563 1
C301	ECKD1H473ZV	001 103 7269 5
C302	ECEA1HUR47	001 120 3249 8
C303	ECEA0JU101	001 120 2829 8
C304	ECKD1H223PF	001 103 1510 9
C305, C306	ECEA1CU471	001 120 3202 3
C307	ECEA1AU220	001 120 3563 1
C308	ECFF1E104ZF	001 103 4992 7

■ REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Code	Description
PACKINGS			
P1 (E, EK, XL, EG) (EB, EH, E1) (EC, XA)	SPGB140	016 971 5044 1	CARTON BOX
P1 (EF)	SPGB141	016 971 5042 3	CARTON BOX
P2	SPSB30	016 977 3212 1	PAD
P3	SPSB31	016 977 3213 0	PAD
P4	SFHKN05N01	017 645 0022 8	CLAMPER, TURNTABLE
P5	SPEB5	016 918 0604 2	CLAMPER, TONEARM
P6	SFHSN05N01E	017 643 0366 7	SPACER, DUST COVER
P7	SPHB5	016 978 0508 5	PROTECTION SHEET
P8	SPPB4	016 978 0531 6	PROTECTION COVER
P9	SFYF32B35	017 978 0087 7	POLYETHYLENE BAG
P10	SFHDC01N01	017 977 0417 4	PAD, TURNTABLE
P11	SPSB29	016 977 3172 2	SPACER, DUST COVER
ACCESSORIES			
A1 (E, EB, EH, EC)	SQXLJ100R-KE	016 983 5188 0	INSTRUCTION MANUAL
A1 (EF, XA)	SQX54194	016 983 5181 7	INSTRUCTION MANUAL
A1 (E1)	SQX54196		INSTRUCTION MANUAL
A1 (EK, XL)	SQX54197	016 983 5162 0	INSTRUCTION MANUAL
A1 (EG)	SQX54198		INSTRUCTION MANUAL
A2 ⚠ (XA)	RJP120ZBS-H	003 402 1437 9	AC PLUG ADAPTOR
A3	SJP2257T	003 492 6803 3	REMOTE CONTROL CORD

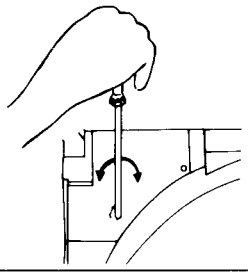
■ MEASUREMENTS AND ADJUSTMENTS

AUTO-START POSITION

1. Clamp tonearm at the rest position. Lightly tap tonearm to make sure it is securely clamped in place.
2. Remove the dust cover.
3. If tonearm sets down outside of record's lead-in groove, turn clockwise (IN). If it sets down to the far inside lead-in groove, turn counterclockwise (OUT).

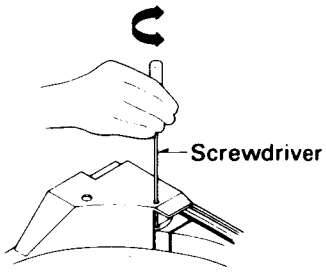
Note: Do not push down very strongly on screwdriver.

4. Replace dust cover.



TONEARM LIFT HEIGHT

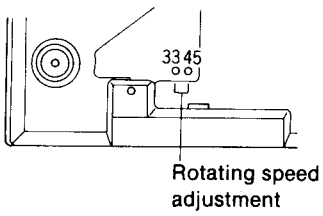
1. Remove the dust cover.
2. Secure the tonearm with arm clamper.
3. Set the cueing control switch to "▼".
4. Put a record on the turntable mat.
5. Shift the arm clamper to set the tonearm free, and adjust the gap between stylus tip and record surface to 4mm~7mm.



ROTATING SPEED

1. Set the speed selector switch to "33".
2. Raise the unit and insert a screwdriver into the adjusting hole (33-rpm) from the back to turn VR101.
3. Set the speed selector switch to "45".
4. Same as in step 2, insert a screwdriver into the adjusting hole (45-rpm) and turn VR102.

Note: The speed adjustment should be done in 33-rpm first.

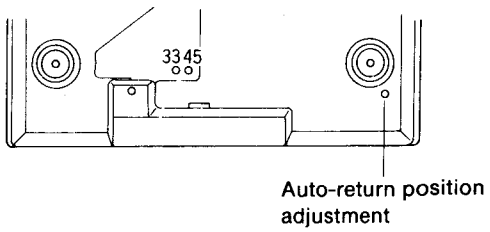


AUTO-RETURN POSITION

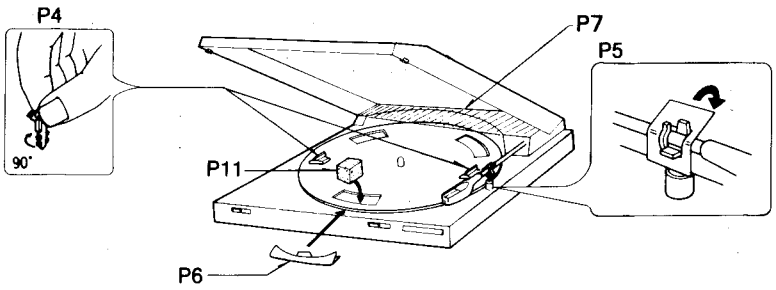
1. Clamp the tonearm at the rest position.
2. Raise the unit and insert a screwdriver into the adjusting hole from the back to turn the adjustment screw.

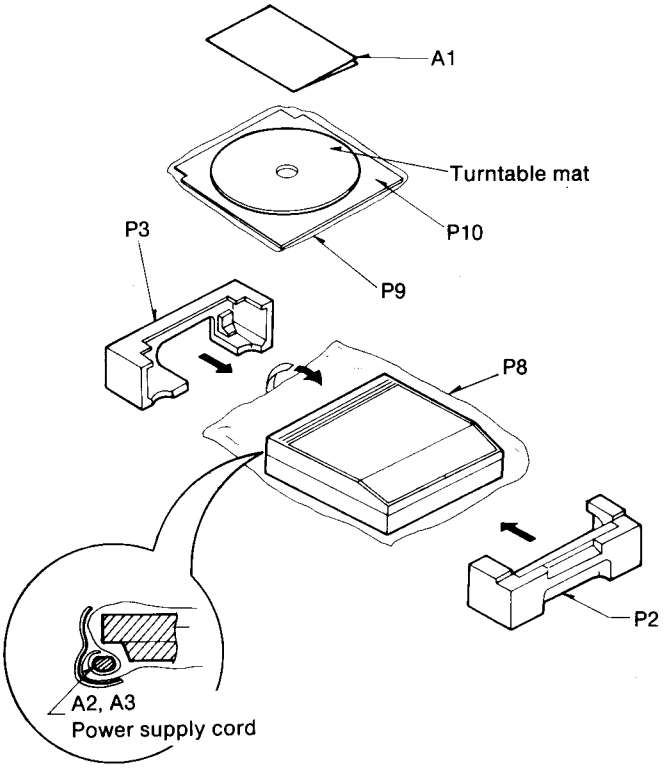
If the tonearm returns before the tune ends.....Turn clockwise.

If there is no auto-return.....Turn counterclockwise.

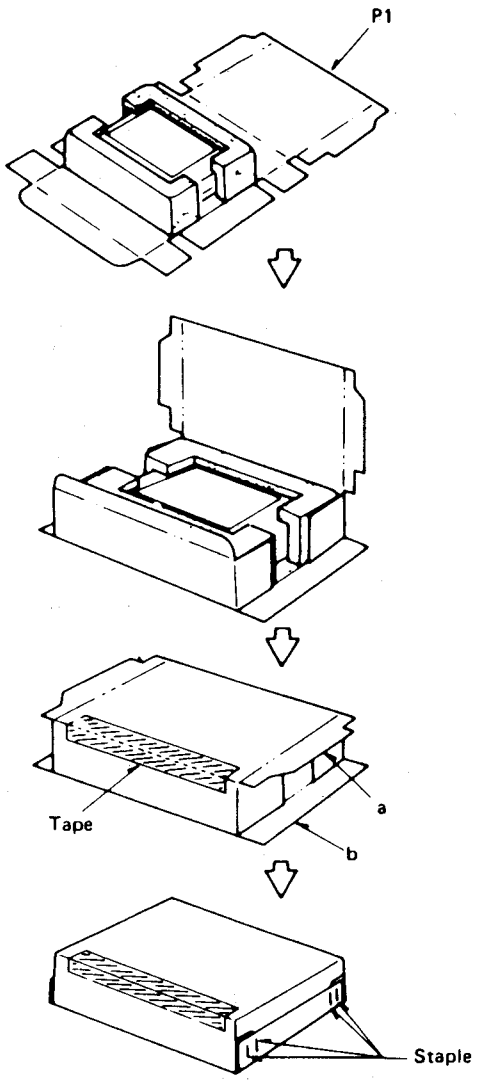


■ PACKING

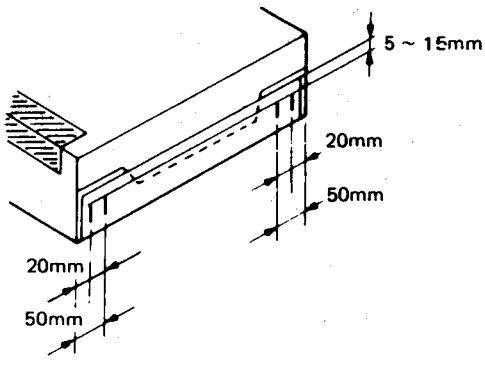




3. Place the unit (with cushions attached) as illustrated.
4. Fold the flaps according to the line marks.
5. Seal the top with adhesive tape.
   *Use gum tape or adhesive cloth tape of 50mm wide at least.
6. For the edges, first fold the flap "a" and then flap "b", and staple. Remember to staple only flap "b". (Use 15 or 16mm staple)



*Stapling positions are shown below.



Printed in Japan
870407500Ⓢ TK/HS